

Complete Summary

GUIDELINE TITLE

Principles of appropriate antibiotic use for treatment of acute bronchitis in adults.

BIBLIOGRAPHIC SOURCE(S)

Snow V, Mottur-Pilson C, Gonzales R. Principles of appropriate antibiotic use for treatment of acute bronchitis in adults. Ann Intern Med 2001 Mar 20;134(6):518-20. [2 references]

GUIDELINE STATUS

This is the current release of the guideline.

The Web site on [antimicrobial resistance](#) of the Centers for Disease Control and Prevention (CDC) National Center for Infectious Diseases will be used to provide updates and obtain feedback from clinicians, as will the American College of Physicians (ACP) Web site.

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SCOPE

DISEASE/CONDITION(S)

Uncomplicated acute bronchitis

GUIDELINE CATEGORY

Diagnosis
 Treatment

CLINICAL SPECIALTY

Emergency Medicine
Family Practice
Infectious Diseases
Internal Medicine
Pulmonary Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide specific recommendations about how clinicians can differentiate between bacterial and viral causes of acute bronchitis, and about when the use of antibiotics in acute bronchitis is beneficial

TARGET POPULATION

Immunocompetent adults with acute bronchitis and without complicating comorbid conditions, such as chronic lung or heart disease

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Patient history and physical examination
2. Gram stain and culture of sputum

Treatment

1. Neuraminidase inhibitor therapy
2. Albuterol
3. Analgesics or antipyretic agents
4. Antitussive treatment
5. Vaporizer
6. Elimination of environmental triggers
7. Patient education

MAJOR OUTCOMES CONSIDERED

Diagnosis

- Diagnostic accuracy
- Presence of pneumonia
- Presence of pertussis

Treatment

- Duration and severity of illness
- Potential complications

- Activity limitation
- Work loss

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
 Hand-searches of Published Literature (Secondary Sources)
 Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The MEDLINE database (1966 to October 1999) was reviewed by using Medical Subject Headings and keyword searches that included microbiology and bronchitis and references were analyzed from review articles and chapters in textbooks on infectious disease to identify studies of the microbiology of acute bronchitis. Studies involving patients with chronic lung disease, malignant conditions, or immunosuppression, as well as those conducted during confirmed outbreaks of a pathogen (for example, a *Chlamydia pneumoniae* outbreak at a single university) were excluded. The selection was limited to English-language studies of consecutive, unselected adolescents or adults enrolled in nonreferral, ambulatory settings. In the mid-1980s, it was established that a specific species of *C. pneumoniae* (TWAR) could cause uncomplicated acute bronchitis. Therefore, estimates of the proportion of cases with a potential bacterial cause are limited to studies published since this discovery.

From: Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. *Ann Intern Med* 2001 Mar 20;134(6):521-9.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

A

Etiology or Diagnosis Studies: independent, blinded comparison with reference standard in appropriate spectrum of patients, all of whom have undergone both the diagnostic test in question and testing with the current gold standard; or validated prediction rule.

Treatment or Efficacy Studies: randomized, placebo-controlled trials with little or no heterogeneity.

B

Etiology or Diagnosis Studies: independent, blinded comparison in patients not enrolled consecutively or in a narrow spectrum of patients; or nonvalidated prediction rule.

Treatment or Efficacy Studies: randomized, placebo-controlled trials with some heterogeneity; or well-designed cohort studies.

C

Etiology or Diagnosis Studies: independent, blind comparison, but reference standard not applied to all patients.

Treatment or Efficacy Studies: case series or poor cohort studies.

D

Etiology or Diagnosis Studies: reference standard not applied independently or not applied in a blind manner; or expert opinion.

Treatment or Efficacy Studies: expert opinion.

From: Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults: background, specific aims, and methods. Ann Intern Med 2001 Mar 20; 134(6): 479-86.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

See: Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults: background, specific aims, and methods. Ann Intern Med 2001 Mar 20; 134(6): 479-86.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Comments were solicited from the American College of Physicians (ACP) Clinical Efficacy Analysis Subcommittee; the Respiratory Diseases Branch of the National Center for Infectious Diseases, Centers for Disease Control and Prevention (CDC); and selected individuals. It was approved by the Clinical Efficacy Assessment Committee in June 2000 and by the American College of Physicians Board of Regents in July 2000. The guideline underwent peer review for publication in the journal "Annals of Internal Medicine."

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

1. The evaluation of adults with an acute cough illness or a presumptive diagnosis of uncomplicated acute bronchitis should focus on ruling out pneumonia.

In healthy, nonelderly adults, pneumonia is uncommon in the absence of vital sign abnormalities or asymmetrical lung sounds, and chest radiography is usually not indicated. In patients with cough lasting 3 weeks or longer, chest radiography may be warranted in the absence of other known causes.

2. Routine antibiotic treatment of uncomplicated acute bronchitis is not recommended, regardless of duration of cough.

Most patients with uncomplicated acute bronchitis have a viral illness that is self-limited and will improve on its own, with or without relief of symptoms. Although relief of symptoms will not shorten duration of illness, patients can certainly benefit from such treatments as analgesic or antipyretic agents, beta-agonist inhalers, antitussives, or vaporizers.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are supported by the high quality evidence presented in the clinical practice guideline, part 2: Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. Ann Intern Med 2001 Mar 20; 134(6): 521-9.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Besides decreasing the risk for allergic reactions, adverse reactions, and drug-drug reactions, the intended result of efforts to decrease indiscriminant antibiotic use in the ambulatory setting is to reduce (and preferably reverse) the increase in antibiotic-resistant *Streptococcus pneumoniae*. It is encouraging that in Finland, a 40% reduction in community use of macrolides was associated with a 48% decrease in the prevalence of erythromycin resistance among group A streptococcal isolates over 4 years.

POTENTIAL HARMS

If a benefit of indiscriminant antibiotic use on rare clinical outcomes does exist, it is possible that limiting indiscriminant antibiotic prescribing will attenuate this benefit. A risk or harm voiced more frequently, however, is that not prescribing an antibiotic will lead to patient dissatisfaction with care or increased return visits. In a study of adults seeking care for acute respiratory illness, the quality of the clinician-patient interaction rather than receipt of an antibiotic was the most important determinant of patient satisfaction with care. A recent patient and clinician educational intervention that reduced antibiotic prescribing for adults with acute bronchitis did not lead to increased return visits or dissatisfaction with care.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- Clinical practice guidelines are "guides" only and may not apply to all patients and all clinical situations. Thus, they are not intended to override clinical judgment.
- This guideline will automatically be withdrawn from American College of Physician (ACP) circulation five years after publication.
- These principles should be applied with caution to elderly patients because many of the diagnosis and treatment trials specifically excluded or underrepresented persons older than 65 years of age.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The principles are being disseminated through publication (in whole or in part) in professional society journals (American Family Physician, Annals of Emergency Medicine, Annals of Internal Medicine), presentation at annual meetings of professional societies, and established channels at the Centers for Disease Control and Prevention (CDC).

The Web site on [antimicrobial resistance](#) of the CDC National Center for Infectious Diseases will be used to provide updates and obtain feedback from clinicians.

The guideline developer proposes that the "Principles of Appropriate Antibiotic Use for Acute Respiratory Tract Infections in Adults" will be most useful if they are incorporated into comprehensive quality improvement efforts that include patient education and delivery system improvements.

IMPLEMENTATION TOOLS

Patient Resources

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Snow V, Mottur-Pilson C, Gonzales R. Principles of appropriate antibiotic use for treatment of acute bronchitis in adults. Ann Intern Med 2001 Mar 20; 134(6):518-20. [2 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 Mar 20

GUIDELINE DEVELOPER(S)

American College of Physicians - Medical Specialty Society

GUIDELINE DEVELOPER COMMENT

This guideline is one of the titles in this series on appropriate antibiotic use. The Clinical Efficacy Assessment Subcommittee of the American College of Physicians (ACP) reviewed and endorsed the guidelines and background papers. The

Committee is made up of practicing internists, health services researchers and other academic experts.

SOURCE(S) OF FUNDING

American College of Physicians (ACP)

GUIDELINE COMMITTEE

Clinical Efficacy Assessment Subcommittee (CEAS)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Vincenza Snow, MD, Christel Mottur-Pilson, PhD, and Ralph Gonzales, MD, MSPH

Clinical Efficacy Assessment Subcommittee Members: David C. Dale, MD (Chair); Patricia P. Barry, MD; William E. Golden, MD; Robert D. McCartney, MD; Keith W. Michl, MD; Allan R. Ronald, MD; Sean R. Tunis, MD; Kevin B. Weiss, MD; and Preston L. Winters, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

American College of Physicians-American Society of Internal Medicine Board of Regents - Medical Specialty Society

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the [American College of Physicians \(ACP\) Web site](#).

Print copies: Available from the American College of Physicians, 190 N. Independence Mall West, Philadelphia, PA 19106-1572.

AVAILABILITY OF COMPANION DOCUMENTS

The statements made by the American College of Physicians (ACP) in the guideline document are developed using the information provided in the following background papers:

- Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults: background, specific aims, and methods. *Ann Intern Med* 2001 Mar 20;134(6):479-86 [56 references]. Electronic copies: Available from the [ACP Web site](#).
- Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. *Ann Intern Med* 2001 Mar 20;134(6):521-9 [75 references]. Electronic copies: Available from the [ACP Web site](#).

Print copies: Available from ACP, 190 N. Independence Mall West, Philadelphia, PA 19106-1572.

Information contained in these background papers is represented in the methodology fields of the NGC Summary (i.e., Methods to Collect Evidence; Methods to Analyze the Evidence; Cost Analysis).

PATIENT RESOURCES

The following is available (for purchase) to physicians for patient education purposes:

- A new threat to your health: antibiotic resistance. Patient education brochure. Atlanta (GA): Centers for Disease Control and Prevention (CDC), 2001.

Ordering information is available at the Centers for Disease Control and Prevention (CDC) National Center for Infectious Diseases, [Division of Bacterial and Mycotic Diseases Antibiotic Resistance Web site](#).

The brochure is distributed by the Public Health Foundation, 1220 L Street, N.W., Suite 350, Washington, DC 20005; Telephone, (877) 252-1200 (toll free in the U.S.) or (301) 645-7773 (for international orders), 9:00 a.m. - 4:30 p.m. (Eastern Time), Monday through Friday; Fax: (301) 843-0159; Web site: www.phf.org.

The following is also available:

- Antibiotics: Do you really need them? American College of Physicians (ACP) 2001.

This brochure is available at www.doctorsforadults.com/antibio.pdf or by ordering through American College of Physicians customer service (215)-351-2600.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material

and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on May 24, 2001. The information was verified by the guideline developer as of July 30, 2001.

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